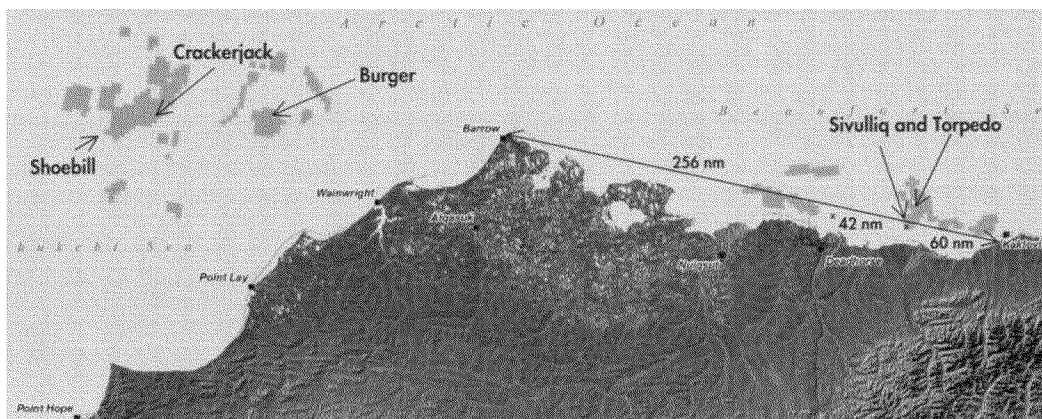


# Information Sheet

The Arctic general permit for oil and gas exploration wastewater discharges expired in 2011. EPA will re-issue the general permit as two exploration general permits for discharges to the Beaufort and Chukchi Seas in Oct. 2012. We are taking public comments on the draft permits through **March 30, 2012**.



## ***What are the Beaufort Sea and Chukchi Sea general permits?***

- The Beaufort permit allows exploration discharges in state and federal waters in the Beaufort Sea. The Chukchi permit allows exploration discharges only in federal waters in the Chukchi Sea.
- They allow wastewater discharges from multiple oil and gas exploration operators if the discharges meet the permit terms and conditions.
- They restrict the pollutants allowed in the discharges to protect human health and the marine environment.
- The Alaska Department of Environmental Conservation (DEC) will assume responsibility for administering the Beaufort permit for exploration discharges to state waters in October 2012. EPA will retain responsibility for discharges to federal waters.
- The general permits allow exploration wastewater discharges; they do not approve drilling activities. The Bureau of Ocean Energy Management (BOEM) and Bureau of Safety and Environmental Enforcement (BSEE) oversee leasing activities and issue permits to drill in the Outer Continental Shelf.

## ***How are the Beaufort and Chukchi permits different from the expired Arctic permit?***

All of the permit changes are summarized in Appendix A of the Fact Sheet. Some of the main changes are:

- Operators must do environmental studies before, during, and after drilling.
- Operators must monitor, collect, and report discharge data to EPA.
- Allow only discharges of water-based drilling fluids and cuttings.
- No discharge of test fluids or synthetic and oil-based drilling fluids and cuttings.
- No discharge of water-based drilling fluids or cuttings during bowhead whaling in the Beaufort Sea - unless EPA allows based on operator's storage capacity and on-shore disposal feasibility analysis.
- No discharge of water-based drilling fluids or cuttings, sanitary or domestic wastes on stable ice in the Beaufort Sea - unless EPA allows based on operator's onshore disposal alternatives analysis.
- Some waste streams must be screened for toxicity.
- A detailed inventory of all added chemicals must be submitted to EPA.
- No discharges to more than five wells in a lease block.
- Water-based drilling fluids and cuttings discharges must be tested weekly and noncompliance reported to EPA within 24 hours.

## ***Shell will collect and dispose their exploration wastes from Camden Bay off-site – do the Beaufort and Chukchi permits require this?***

- Shell committed to store and barge off-site six of their waste streams from Camden Bay (drilling muds, drill cuttings, and sanitary, domestic, ballast and bilge wastewaters) through a separate independent agreement with the Alaska Eskimo Whaling Commission (AEWC) and the North Slope Borough (NSB) for 2012. This agreement is not enforceable by any federal or state regulatory authorities.
- EPA's Beaufort and Chukchi general permits do not contain this requirement.
- The Beaufort Permit does not allow discharge of drilling fluids or cuttings during active bowhead whaling (i.e., when hunting is occurring) in the Beaufort Sea - unless allowed by EPA based on the operator's feasibility analysis.
- The Beaufort Permit does not allow discharge of drilling fluids or cuttings, sanitary or domestic wastes on stable ice - unless allowed by EPA based on the operator's onshore disposal alternatives analysis.
- The permits limit pollutants in the discharges and require environmental monitoring to ensure no unreasonable degradation of the marine environment.
- EPA's regulations authorize the discharge of pollutants if certain limits and requirements are met, and no unreasonable degradation to the marine environment occurs as a result of the discharges.

## ***How will EPA make sure that operators comply with the permits?***

- Before drilling, operators must request permission to use the permits and show EPA how they meet the permit requirements and conditions.
- EPA is developing a strong enforcement program that will use monitoring and electronic reporting, active compliance and enforcement oversight, to ensure compliance with the permit requirements.

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### **Questions about the permits?**

#### **Hanh Shaw**

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206-553-0171 or 1-800-424-4372  
[shaw.hanh@epa.gov](mailto:shaw.hanh@epa.gov)

### **Questions about public participation?**

#### **Suzanne Skadowski**

Community Involvement Coordinator  
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### **Find more information online:**

The draft permits, fact sheet, and supporting documents are all on the web at:

<http://yosemite.epa.gov/R10/WATER.NSF/NPDES+Permits/General+NPDES+Permits>

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## ***Comment on the Beaufort Sea and Chukchi Sea general permits by March 30, 2012***

Submit your spoken or written comments at one of these public hearings or send to: U.S. EPA Region 10, Attn: Hanh Shaw, 1200 6<sup>th</sup> Ave Ste. 900, OWW-130, Seattle, WA 98101 or email to [R10arcticpermits@epa.gov](mailto:R10arcticpermits@epa.gov) or send by Fax: 206-553-0165.

<b>March 13, 2012</b>	<b>March 15, 2012</b>	<b>March 16, 2012</b>
<b>Inupiat Heritage Center, Barrow</b>	<b>Loussac Library, Anchorage</b>	<b>Teleconference Calls</b>
Open House: 4pm – 5pm Presentation: 6pm – 7pm Testimony: 7pm – 10pm Teleconference line: 1-866-299-3188, code: 2065536524	Open House: 4pm – 5pm Presentation: 6pm – 7pm Testimony: 7pm – 10pm	Two Sessions Testimony: 10am – 1pm Testimony: 2pm – 5pm Teleconference line: 1-866-299-3188, code: 2065536524

**PRESENTATION SUMMARY**  
**Draft Beaufort and Chukchi NPDES General Permits**  
*March 2012*

**I. Overview**

- EPA is reissuing the expired Arctic NPDES General Permit as two general permits (Beaufort and Chukchi GP). The areas of coverage include discharges from existing lease locations and future leases that might be sold during the five-year permit term (2012-2017).
- The general permits are for discharges of exploration activities; any future offshore development and production activities or discharges would undergo a separate robust environmental review and permitting process.
- The Beaufort and Chukchi exploration general permits contain a vast improvement from the expired permit. Examples include:
  - ☐ expand the scope of the environmental monitoring program (EMP) and require it to be implemented at every drilling site for four phases of exploration activity;
  - ☐ impose additional EMP requirements, if water-based drilling fluids and drill cuttings are authorized to be discharged by the Director;
  - ☐ eliminate the authorization to discharge non-aqueous drilling fluids and associated drill cuttings (i.e., only water-based drilling fluids and cuttings are authorized);
  - ☐ eliminate the authorization to discharge test fluids;
  - ☐ increase the Notice of Intent (NOI) requirements;
  - ☐ increase the chemical additive inventory and reporting requirement for all discharges, including limitations on chemical additive concentrations;
  - ☐ apply a 5-meter water depth discharge prohibition to all discharges;
  - ☐ limit drilling to 5 wells per lease block, except upon the EPA's review and authorization for discharges from the additional wells;
  - ☐ prohibit the discharge of water-based drilling fluids and drill cuttings during active bowhead whaling activities in the Beaufort Sea, unless the EPA authorizes the discharge after review of the operator's evaluation of the feasibility of drilling facility storage capacity and land-based disposal alternatives;
  - ☐ require an alternatives analysis before authorization is granted for discharge of water-based drilling fluids and drill cuttings, sanitary, and domestic wastes to stable ice in the Beaufort Sea area of coverage;
  - ☐ require screening of certain waste streams for toxicity and conduct whole effluent toxicity (WET) testing if those waste streams exceed a volume discharge threshold and if chemicals are added to the system, or if an initial toxicity screen shows potential toxicity;

- include cooling water intake structure requirements; and
- include electronic Discharge Monitoring Report (DMR) requirements.
- EPA relied on Traditional Knowledge (TK) information collected from four North Slope whaling communities to inform the draft general permits (See Section V, below).
- EPA is currently consulting with the National Marine Fisheries Service (NMFS) and U.S. Fish and Wildlife Service (USFWS) to ensure its action do not adversely affect marine resources and critical habitat protected under the Endangered Species Act (ESA) and Marine Mammal Protection Act (MMPA).
- EPA is requesting public review and comment on the draft general permits and fact sheet. Public meetings and hearings are scheduled next week in several communities. The comment period will end on March 30, 2012.
- EPA plans to reissue the permits by October 31, 2012.

## II. Authorized Discharges

No.	Description	Monitoring Requirements
001	<p><u>Water-Based Drilling Fluids</u> - The circulating fluid (mud) used in the rotary drilling of wells to clean and condition the hole and to counterbalance formation pressure. The draft Beaufort and Chukchi GPs propose to only authorize the discharge of water-based drilling fluids.</p> <p><u>Drill Cuttings</u> - The particles generated by drilling into subsurface geologic formations and carried out from the wellbore with the drilling fluid. Examples of drill cuttings include small pieces of rock varying in size and texture from fine silt to gravel. Drill cuttings are generally generated from solids control equipment and settle out and accumulate in quiescent areas in the solids control equipment or other equipment processing drilling fluid (i.e., accumulated solids).</p>	<p>Test suspended particulate phase (SPP) toxicity weekly. Test stock barite mercury and cadmium for each well. Monitor for pH, total aqueous hydrocarbons (TAqH) and total aromatic hydrocarbons (TAH). 24-hour noncompliance reporting.</p> <p>Limit the rates of discharge based on water depths.</p>
002	<u>Deck Drainage</u> - Any waste resulting from deck washings, spillage, rainwater, and runoff from gutters and drains, including drip pans and work areas within oil and gas facilities.	Use oil-water separator. No discharge if oil or sheen present. Monitor flow, pH, TAqH, TAH, and WET (if screen test shows toxicity).
002	<u>Sanitary Waste</u> - Human body waste discharged from toilets and urinals located within oil and gas facilities.	<p>State waters (combined with Domestic Waste): Limit and monitor flow, dissolved oxygen, pH, residual chlorine, BOD<sub>5</sub>, TSS, fecal coliform (weekly);</p> <p>Federal waters: Limit and monitor pH, residual chlorine, BOD<sub>5</sub>, TSS, fecal coliform (weekly). Monitor flow. No discharge if oil or sheen present.</p>
004	<u>Domestic Waste</u> - Materials discharged from sinks, showers, laundries, safety showers, eye-wash stations, hand-wash stations, fish cleaning stations, and galleys located within oil and gas facilities.	Federal waters: Monitor flow, pH. No discharge of solids, garbage, or foam.
005	<u>Desalination Unit Waste</u> - Wastewater associated with the process of creating freshwater from seawater.	No discharge if oil or sheen present. Monitor flow. Test pH and WET (if screen test shows toxicity).
006	<u>Blowout Preventer Fluid</u> - Fluid used to actuate hydraulic equipment	No discharge if oil or sheen present. Monitor:

	on the blowout preventer.	flow, pH
007	<u>Boiler Blowdown</u> – Water and minerals drained from boiler drums to minimize solids build-up in the boiler.	No discharge if oil or sheen present. Monitor flow. Test pH and WET (if screen test shows toxicity).
008	<u>Fire Control System Test Water</u> – Water released during the training of personnel in fire protection, and the testing and maintenance of fire protection equipment.	No discharge if oil or sheen present. Monitor flow. Test pH and WET (if screen test shows toxicity).
009	<u>Non-contact Cooling Water</u> – Water used for non-contact, once-through cooling, including water used for equipment cooling, evaporative cooling tower makeup, and dilution of effluent heat content.	No discharge if oil or sheen present. Monitor: flow, pH, temperature. Test WET (if screen test shows toxicity).
010	<u>Uncontaminated Ballast Water</u> – Harbor or seawater added or removed to maintain the proper ballast floater level and ship draft and to conduct jack-up rig related seabed support capability tests (e.g., jack-up rig preload water).	Use oil-water separator. No discharge if oil or sheen present. Monitor: flow, pH.
011	<u>Bilge Water</u> – Water that collects in the lower internal parts of the drilling vessel hull.	Use oil-water separator. Monitor pH, flow. Test WET (if screen test shows toxicity).
012	<u>Excess Cement Slurry</u> – Excess cement slurry that results from equipment washdown after cementing operations. Excess cement slurry is discharged intermittently while drilling, depending on drilling, casing, and testing program and problems.	No discharge if oil or sheen present. Monitor: flow, pH.
013	<u>Mud, Cuttings, Cement at the Seafloor</u> – Materials discharged at the surface of the ocean floor during construction of the mudline cellar, during the early phases of drilling operations before the riser is installed, and during well abandonment and plugging.	No discharge if oil or sheen present. Monitor: flow.

### III. Estimated Discharge Volumes

#### Beaufort GP – Estimated discharge quantities based on NOIs (*per well*) (18-34 wells estimated over 5-year permit term)

Discharge	Discharge Quantities <sup>a</sup> (bbl/well)
Water-based drilling fluids and drill cuttings (001)	5,071 <sup>a</sup>
Deck drainage (002) <sup>b</sup>	244
Sanitary wastes (003)	1,022 <sup>a</sup>
Domestic wastes (004)	11,390 <sup>a</sup>
Desalination unit wastes (005)	5,390
Blowout preventer fluid (006)	42
Boiler blowdown (007)	0
Fire control system test water (008)	0
Non-contact cooling water (009)	2,187,000
Uncontaminated ballast Water (010)	212 <sup>a</sup>
Bilge water (011)	652 <sup>a</sup>
Excess cement slurry (012)	50
Muds, cuttings, and cement at the seafloor (013)	2,791

a. Shell's NOIs indicated zero discharge in Camden Bay at the Sivulliq and Torpedo prospects.

**Chukchi GP – Estimated discharge quantities based on NOIs (*per well*)**  
**(24-42 wells estimated over 5-year term)**

Discharge	Discharge quantities (bbl/well)
Water-based drilling fluids and drill cuttings (001) <sup>a</sup>	7,693
Deck drainage (002)	478
Sanitary wastes (003)	1,100
Domestic wastes (004)	9,343
Desalination unit wastes (005)	7,990
Blowout preventer fluid (006)	42
Boiler blowdown (007)	390
Fire control system test water (008)	110 bbl/month
Non-contact cooling water (009)	2,700,000
Uncontaminated ballast Water (010)	168
Bilge water (011)	622
Excess cement slurry (012)	50
Muds, cuttings, and cement at the seafloor (013)	3,747

bbl = barrel

a Quantities include combined average drilling fluids and drill cuttings quantities from 26 NOIs received from Shell, ConocoPhillips, and Statoil.

**IV. Environmental Monitoring Program (EMP) Requirements – at each drill site**

EMP elements:

1. Dilution, plume and deposition modeling (Discharges 001, 009, and 013).
2. Contains four phases:
  - Phase I (baseline) assessment – Initial site survey, physical and receiving water data collection, and benthic community structure;
  - Phase II (during drilling) assessment – Effluent toxicity characterization, cooling water (Discharge 009) plume and water column monitoring, and collect observations for potential marine mammal deflection during high periods of discharge;
  - Phase III (post-drilling) assessment – Physical sea bottom survey
  - Phase IV (15 months after drilling ceases) assessment – Physical sea bottom survey, benthic community structure.
3. Whole Effluent Toxicity (WET) testing once per well for certain discharges that (a) initial screening indicates potential toxicity, or (b) exceed a discharge rate greater than 10,000 gallons during any 24-hour period, and (3) if chemicals are added.
4. Two EMP reports must be submitted.

Additional EMP requirements for discharge of water-based drilling fluids and drill cuttings:

5. Analyze drilling fluids and drill cuttings for metals contaminants of concern (Phases I and II);
6. Sediment monitoring of the drilling site (Phases I, III, and IV);
7. Evaluate benthic community tissue for metals and organic compounds, and conduct a metals bioaccumulation study in the drilling site area (Phases I, III, and IV);
8. Sample and assess metals, organics, turbidity, and total suspended solids throughout the discharge-affected water column and discharge plume (Phase II); and
9. Observe for potential marine mammal deflection (Phase II).

## **V. How TK Informed EPA's Draft Decisions - examples**

1. Eliminate the authorization to discharge non-aqueous drilling fluids and associated drill cuttings (i.e., only water-based drilling fluids and cuttings are authorized);
2. Prohibit the discharges of water-based drilling fluids and drill cuttings under the Beaufort general permit during active bowhead hunting activities in the Beaufort Sea, unless authorized in writing by EPA. If the permittee proposes to discharge this waste stream during this period, it must demonstrate (1) storage capacity is not available on the drilling facility during this period, and (2) land-based disposal options are not feasible;
3. Require an alternatives analysis before authorization is granted for discharge of water-based drilling fluids and drill cuttings, sanitary, and domestic wastes to stable ice in the Beaufort Sea area of coverage;
4. Require an inventory of chemicals added to each wastestream, where in the drilling process they are used, and establish limits on chemical additive concentrations;
5. Require Environmental Monitoring Programs (EMP) at each drilling site during four phases of the drilling activity;
6. Toxicity screening and WET testing;
7. Limit drilling to 5 wells per lease block, except upon the EPA's review and authorization for discharges from the additional wells; and
8. Prohibit all discharges in areas with water depths of less than 5 meters.

## **VI. ODCE – no unreasonable degradation**

### **Definitions and Evaluation Criteria**

EPA's Ocean Discharge Criteria (40 CFR Part 125, Subpart M) set forth specific determinations of unreasonable degradation that must be made before permit issuance. Unreasonable degradation of the marine environment is defined (40 CFR 125.121[e]) as follows:

- Significant adverse changes in ecosystem diversity, productivity, and stability of the biological community within the area of discharge and surrounding biological communities;
- Threat to human health through direct exposure to pollutants or through consumption of exposed aquatic organisms; or
- Loss of aesthetic, recreational, scientific, or economic values, which are unreasonable in relation to the benefit derived from the discharge.

This ODCE is based on 10 criteria (40 CFR 125.122):

- Quantities, composition, and potential for bioaccumulation or persistence of the pollutants to be discharged;
- Potential transport of such pollutants by biological, physical, or chemical processes;
- Composition and vulnerability of the biological communities which may be exposed to such pollutants, including the presence of unique species or communities of species, the presence of species identified as endangered or threatened pursuant to the Endangered Species Act, or the

presence of those species critical to the structure or function of the ecosystem, such as those important for the food chain;

- Importance of the receiving water area to the surrounding biological community, including the presence of spawning sites, nursery/forage areas, migratory pathways, or areas necessary for other functions or critical stages in the life cycle of an organism;
- Existence of special aquatic sites including, but not limited to, marine sanctuaries and refuges, parks, national and historic monuments, national seashores, wilderness areas, and coral reefs;
- Potential impacts on human health through direct and indirect pathways;
- Existing or potential recreational and commercial fishing, including finfishing and shellfishing;
- Any applicable requirements of an approved Coastal Zone Management Plan;
- Other factors relating to the effects of the discharge as may be appropriate; and
- Marine water quality criteria developed pursuant to CWA section 304(a)(1).

### **Areal extent of solids discharges**

#### ***Chukchi Sea***

– Modeling results indicate at a maximum rate of discharge at 1000bbL/hr, a 1,000 m (3,280 ft) radius for the distribution of fine-grained solids. Each well would affect approximately 62 acres, with a deposition thickness of less than 1 inch. The completion of a maximum of 42 wells over the duration of the 5-year permit would result in the coverage of approximately 2,604 acres of the seafloor by the solid components compared to the size of the 33.76 million-acre total Area of Coverage. Under those assumptions, solids discharges would affect less than 0.01 percent of the seafloor in the Chukchi area of coverage.

#### ***Beaufort Sea***

– Similar to the Chukchi, the solid components of the discharge would settle within a radius of 3,280 ft affecting approximately 62 acres of seafloor per well. The completion of a maximum of 34 wells over the duration of the 5-year permit would result in the coverage of approximately 2,100 acres of the seafloor compared to the size of the 33.76 million-acre total Area of Coverage. As such, solids discharges would affect about .0032 percent of the seafloor in the Beaufort area of coverage.



## Beaufort and Chukchi Sea Exploration General Permits - New Requirements

*EPA welcomes your comments on the permit requirements listed here and in the Fact Sheet.*

BEAUFORT GENERAL PERMIT	CHUKCHI GENERAL PERMIT
<b>Permit Coverage Areas</b>	
Beaufort Sea: Federal and state offshore waters.	Chukchi Sea: Federal offshore waters.
<b>Pre-Drilling Notice</b>	
Confirm discharge location in state or federal waters.	N/A
Submit Notice of Intent (NOI) 120 days before discharge at each drill site. Complete a discharge checklist.	Submit NOI 120 days before discharge at each drill site. Complete a discharge checklist.
Notify EPA 7 days before discharging at drill sites.	Notify EPA 7 days before discharging at drill sites.
<b>Environmental Monitoring Plan</b>	
Submit for each drill site with NOI.	Submit for each drill site with NOI.
<b>Electronic Monitoring Reports</b>	
Submit monitoring reports electronically.	Submit monitoring reports electronically.
<b>Number of Wells</b>	
Discharge at no more than 5 wells per lease block.	Discharge at no more than 5 wells per lease block.
<b>Restricted Areas</b>	
No discharges in water depth less than 5 meters.	No discharges in water depth less than 5 meters.
<b>Active Bowhead Whaling</b>	
No discharge of drilling fluids or cuttings during active bowhead whaling in the Beaufort Sea – unless EPA allows based on operator's storage capacity and offsite disposal feasibility analysis.	No restrictions.
<b>On-ice Discharge Restriction</b>	
No discharge of drilling fluids, cuttings, sanitary, domestic waste to stable ice in the Beaufort Sea – unless EPA allows based on operator's offsite disposal feasibility analysis.	No restrictions.
<b>Chemical Inventory</b>	
Submit a detailed inventory of all added chemicals. Chemical concentrations are limited.	Submit a detailed inventory of all added chemicals. Chemical concentrations are limited.
<b>Cooling Water Intake Requirements</b>	
Follow new intake structure requirements.	Follow new intake structure requirements.
<b>Drilling Fluids and Cuttings</b>	
Discharge only water-based drill fluids or cuttings.	Discharge only water-based drill fluids or cuttings.
Test suspended particulate phase (SPP) toxicity weekly. Test stock barite mercury and cadmium for each well. 24-hour noncompliance reporting. Monitor for pH, total aqueous hydrocarbons (TAqH) and total aromatic hydrocarbons (TAH).	Test SPP toxicity weekly. Test stock barite mercury and cadmium for each well. 24-hour noncompliance reporting. Monitor for pH, TAqH and TAH.

BEAUFORT GENERAL PERMIT	CHUKCHI GENERAL PERMIT
<b>Deck Drainage</b>	
Use oil-water separator. No discharge if oil or sheen present. Monitor flow, TAqH, TAH. Test pH, WET (if screen test shows toxicity).	Use oil-water separator. No discharge if oil or sheen present. Monitor flow, TAqH, TAH. Test pH, WET (if screen test shows toxicity).
<b>Sanitary and Domestic Waste</b>	
State waters: limit and monitor flow, dissolved oxygen, pH, residual chlorine, BOD <sub>5</sub> , TSS, fecal coliform (weekly). No discharge of solids/garbage, foam, oily sheen.	N/A
Federal waters: Limit and monitor flow, pH, residual chlorine, BOD <sub>5</sub> , TSS, fecal coliform. No discharge of floating solids/garbage, foam, oily sheen.	Sanitary Waste: Limit and monitor flow, pH, residual chlorine, fecal coliform, BOD <sub>5</sub> , TSS. No discharge of floating solids/garbage, foam, oily sheen.  Domestic Waste: Monitor flow, pH. No discharge of solids, garbage, or foam.
<b>Desalination Waste Boiler Blowdown Fire Control Test Water</b>	
No discharge if free oil present. Monitor flow. Test pH and WET (if screen test shows toxicity).	No discharge if free oil present. Monitor flow. Test pH and WET (if screen test shows toxicity).
<b>Blowout Preventer Fluid Excess Cement Slurry</b>	
No discharge if free oil present. Monitor: flow, pH	No discharge if free oil present. Monitor: flow, pH
<b>Non-contact Cooling Water</b>	
Visually monitor free oil, no discharge if free oil present. Monitor: flow, pH, temp. Test WET (if screen test shows toxicity).	Visually monitor free oil, no discharge if free oil present. Monitor: flow, pH, temp. Test WET (if screen test shows toxicity).
<b>Muds, Cuttings, Cement at Sea Floor</b>	
Visually monitor free oil, no discharge if free oil present. Monitor flow.	Visually monitor free oil, no discharge if free oil present. Monitor flow.
<b>Bilge and Ballast Water</b>	
Use oil-water separator. Monitor pH. Test WET (if screen test shows toxicity).	Use oil-water separator. Monitor flow, pH. Test WET (bilge water if screen test shows toxicity).

## Beaufort and Chukchi Sea Exploration General Permits Drilling Wastewater Discharges Allowed

Wastewater Discharges	Description
001 Drilling Fluids, Muds, Cuttings (water-based)	Fluids and muds are water-based mixtures used to cool and lubricate the drill bit during well drilling and to carry the cuttings to the surface. Rock cuttings, clay, rock debris are generated by well drilling. Cuttings are carried out from the wellbore with the drilling fluid.
002 Deck Drainage	Any waste resulting from deck washings, spillage, rainwater, and runoff from gutters and drains, including drip pans and work areas.
003 Sanitary	Waste from toilets and urinals.
004 Domestic Wastes	Waste from sinks, showers, laundries, and galleys.
005 Desalination Unit Waste	Wastewater from the process of creating freshwater from seawater.
006 Blowout Preventer Fluid	Fluid used to run the hydraulic equipment on the blowout preventer.
007 Boiler Blowdown	Water and minerals drained from boiler drums to keep solids from building up in the boiler.
008 Fire Control Test Water	Used in fire protection training, testing and maintenance of fire protection equipment.
009 Cooling Water (Non-Contact)	Used to cool the drilling equipment and discharged into waters around the drill rig. Non-contact cooling water does not touch chemicals or other discharges.
010 Ballast Water (Uncontaminated)	Marine water added or removed from the ship to stabilize and balance the vessels and to pre-load a jack-up rig on the seabed.
011 Bilge Water	Collects inside the lower parts of the drilling vessel hull.
012 Cement Slurry (Excess)	Cement is used to set the well for drilling and to close off the well. Excess cement slurry is discharged while drilling or during equipment washdown after cementing operations.
013 Drilling Muds, Cuttings, Cement at the seafloor (water-based)	Drilling muds, cuttings and cement that are discharged at the ocean floor during construction of the mudline cellar, during the early phases of drilling operations before the riser is installed, and during well abandonment.

## Beaufort and Chukchi Sea Exploration General Permits Environmental Monitoring Plans

**All operators must design and implement an Environmental Monitoring Plan for each drill site and submit the plan with their 120-day Notice of Intent before they discharge.**

Environmental Monitoring Plans must have:	
Dilution, plume and deposition modeling	
Phase I assessment (baseline)	Initial site survey, physical and receiving water data collection, and benthic community structure
Phase II assessment (during drilling)	Effluent toxicity characterization, cooling water (Discharge 009) plume and water column monitoring, and collect observations for potential marine mammal deflection during high periods of discharge
Phase III assessment (post-drilling)	Physical sea bottom survey
Phase IV assessment (15 months after drilling ceases)	Physical sea bottom survey, benthic community structure.
Whole Effluent Toxicity (WET) testing once per well for certain discharges if:	(a) initial screening indicate potential toxicity, or (b) exceed a 10,000 gallons discharge rate during any 24-hour period and if chemicals are added.
Two EMP reports must be submitted	

**Operators that discharge water-based drilling fluids, muds or cuttings must also design and implement an Environmental Monitoring Plan for each drill site and submit the plan with their 120-day Notice of Intent before they discharge.**

Environmental Monitoring Plans (for water-based drilling fluids, muds or cuttings) must:
Analyze drilling fluids and drill cuttings for metals contaminants of concern
Monitor sediment at the drilling site
Evaluate benthic community tissue for metals and organic compounds
Conduct a metals bioaccumulation study in the drilling site area
Sample and assess metals, organics, turbidity, and total suspended solids throughout the discharge-affected water column and discharge plume
Observe for potential marine mammal deflection